

Driscoll et al., U.S. Patent No. 6053837, herein after referred to as Driscoll. It was contended in the above-identified Office Action that Driscoll teaches all the elements of the rejected claims. The applicant respectfully traverses this contention of anticipation.

The applicant claims a system and process that segments panoramic video frames, thereby allowing selective decoding of just those specific regions that are to be viewed. Specifically, each frame is segmented into a plurality of regions. The frames are segmented in the same way such that the segmented regions correspond from one frame to the next. Each segmented region is then optionally compressed and encoded separately. Thus, separate video streams are generated for each of the segmented regions of the each panoramic video frame. Once the panoramic video frames have been segmented, compressed (if desired), and encoded, they are ready for transfer to the viewer. This can be accomplished in a number of ways, each with particular advantages. One way to transfer the frames involves an interactive approach. Essentially, the viewer, identifies the portions of the scene the user is currently viewing. In the case of a network connection, the viewer then informs a server of the segments of the next frame of the video that are needed to render the desired view to the user. The server then transfers only the requested segments of the next panoramic video frame to the viewer. This process is repeated for each frame of the panoramic video.

In regard to the encoding of the panoramic frame segments, each frame segment is appended with an identifier that identifies what frame and what frame segment "location" (i.e., what region of the panoramic frame) the accompanying image data relates to. In addition, a separate file can be created for each video stream corresponding to a certain frame segment region. Alternately, one file could be created for all segment regions, with separate frames and frame segments being identified by the aforementioned identifiers. (page 4, lines 4-10; page 10, line 31-page 11, line 15).

In contrast, Driscoll teaches an electronic image distribution apparatus. The central feature of the system is a panoramic image server coupled to a source of panoramic image information. The panoramic image server converts the panoramic image frames into a format that is more conducive for electronic transmission. Specifically, the panoramic image server extracts a subset of each panoramic image frame and compresses that subset of the panoramic image. The panoramic image server may also geometrically transform the subset of the panoramic image frame. The compressed subset of a panoramic image frame is transmitted across a transmission medium to a client system. **In regard to the encoding of the panoramic frame segments, Driscoll, however, makes no mention of the applicant's claimed system and method of appending each frame segment with an identifier that identifies what frame and what frame segment "location" (i.e., what region of the panoramic frame) the accompanying image data relates to.**

Thus, the Driscoll reference does not teach the claimed features of the applicant's invention whereby encoding of the panoramic frame segments is performed by appending each frame segment with an identifier that identifies what frame and what frame location the accompanying image data relates to.

A prima facie case of anticipation is established only when the Examiner shows, inter alia, that the cited reference teaches each of the claimed elements of a rejected claim. In this case, the Driscoll reference does not teach the advantageous feature of the applicant's claimed invention of appending each frame segment with an identifier that identifies what frame and what frame location the accompanying image data relates to. Thus, the rejected claims, as modified, recite advantageous features that are not taught in the cited art, and as such a prima facie case of anticipation is not established. It is, therefore, respectfully requested that the rejection of Claims 1, 3-5, 16-21 be reconsidered based on the novel claim language exemplified in Claim 1:

" A process of encoding frames of a panoramic video so as to allow selective decoding of the frames, comprising the process actions of...segmenting each frame of the panoramic video into plural corresponding regions; and separately encoding each region of the panoramic video frames, wherein encoding the frame regions of the panoramic video comprises creating at least one data file comprising the data associated with each frame region of each frame of the panoramic video and an indicator associated with the data of each frame region that identifies its corresponding panoramic video frame and its location within that frame."

The 35 USC 103 Rejection of Claims 2, 6-15, 22-30.

Claims 2, 6-15, 22-30 were rejected under 35 USC 103(a) as unpatentable over Driscoll, in view of Furian (U.S. Patent No. 6,337,708). The Examiner contended that it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of Furian in the process of Driscoll in order to efficiently distribute the panoramic images (Furian, col. 1). The applicant respectfully traverses this contention of obviousness.

In order to deem the applicant's claimed invention unpatentable under 35 USC 103, a prima facie showing of obviousness must be made. To make a prima facie showing of obviousness, all of the claimed elements of an applicant's invention must be considered, especially when they are missing from the prior art. If a claimed element is not taught in the prior art and has advantages not appreciated by the prior art, then no prima facie case of obviousness exists. The Federal Circuit court has stated that it was error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein (*In Re Fine*, 837 F.2d 107, 5 USPQ2d 1596 (Fed. Cir. 1988)).

As discussed previously, the applicant claims a system and process that segments panoramic video frames, thereby allowing selective decoding of just those specific regions that are to be viewed. **In regard to the encoding of the panoramic frame segments, each frame segment is appended with an identifier that identifies what frame and what frame segment "location" (i.e., what region of the panoramic frame) the accompanying image data relates to.** A separate file can be created for each video stream corresponding to a certain frame segment region. Alternately, one file could be created for all segment regions, with separate frames and frame segments being identified by the aforementioned identifiers.

As discussed previously, the Driscoll reference does not teach the applicant's claimed system and method of **encoding of the panoramic frame segments, each frame segment is appended with an identifier that identifies what frame and what frame segment "location" (i.e., what region of the panoramic frame) the accompanying image data relates to.**

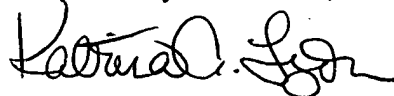
As to Claim 6, the subject matter of which has now been incorporated into Claim 1, the Examiner contended that Furian discloses a data file comprising the data associated with each frame region and an indicator that identifies its corresponding panoramic video frame and its location within that frame (FIGs 4-6, col. 5 line 17- column 7 line 56). Applicant has scoured these figures and 3 columns of text in the Furian reference and has found no reference to **encoding of the panoramic frame segments, each frame segment is appended with an identifier that identifies what frame and what frame segment "location" (i.e., what region of the panoramic frame) the accompanying image data relates to.** This passage of the Furian invention discusses breaking the panoramic image into unevenly sized tiles, not appending each frame segment with an identifier that identifies what frame and what frame segment "location". The applicant contends that the Furian reference does not teach that **each frame segment is appended with an identifier that identifies what frame and what frame segment "location".**

The applicant's claimed invention employing indicators appended to each frame segment, allows for the preservation of network resources and the processing and storage requirements of the viewer are still minimized.

Thus, the applicant has claimed elements not taught in the cited art and which have advantages not recognized therein. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Driscoll in view of Furian. As such, it is respectfully requested that the rejection of Claims 2, 6-15, 22-30 be reconsidered based on the above-quoted non-obvious claim language.

It is believed that the foregoing amendment and arguments have placed the claims in condition for allowance. Therefore, reconsideration of the rejection of Claims 1-5, 7-21 and 23-30 is respectfully requested. In addition, allowance of these claims at an early date is courteously solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Katrina A. Lyon', written over a horizontal line.

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Version With Markings to Show Changes Made

1. A process of encoding frames of a panoramic video so as to allow selective decoding of the frames, comprising the process actions of:
 - segmenting each frame of the panoramic video into plural corresponding regions; and
 - separately encoding each region of the panoramic video frames, wherein encoding the frame regions of the panoramic video comprises creating at least one data file comprising the data associated with each frame region of each frame of the panoramic video and an indicator associated with the data of each frame region that identifies its corresponding panoramic video frame and its location within that frame.
7. The process of Claim [6]1, wherein the process action of creating the at least one data file further comprises an action of creating a separate data file for each frame region of the panoramic video.
8. The process of Claim [6]1, wherein the process action of creating the at least one data file further comprises an action of creating a separate data file for each series of correspondingly located frame regions of the panoramic video.
9. The process of Claim [6]1, wherein the process action of creating the at least one data file comprises an action of creating a single data file comprising the data and indicators associated with each frame region of the panoramic video.
10. The process of Claim [6]1, further comprising a process action of sending the at least one data file from a server over a network to a panoramic video viewer resident on a client.
14. The process of Claim [6]1, further comprises the process action of storing the at least one data file on a storage medium accessible by a panoramic video viewer.

16. A system for encoding frames of a panoramic video so as to allow selective decoding of the frames comprising:

at least one general purpose computing device; and

a computer program comprising program modules executable by the at least one computing device, wherein the at least one computing device is directed by the program modules of the computer program to,

segment each frame of the panoramic video into plural corresponding frame segments; and

separately encode each frame segment of the panoramic video frames, wherein said encoding comprises compressing a series of said corresponding frame segments, and wherein encoding the frame regions of the panoramic video comprises creating at least one data file comprising the data associated with each frame region of each frame of the panoramic video and an indicator associated with the data of each frame region that identifies its corresponding panoramic video frame and its location within that frame.

17. A computer-readable medium having computer-executable instructions for encoding frames of a panoramic video so as to allow selective decoding of the frames, said computer-executable instructions comprising:

segmenting each frame of the panoramic video into plural corresponding frame segments; and

separately encoding each frame segment of the panoramic video frames, wherein encoding the frame regions of the panoramic video comprises creating at least one data file comprising the data associated with each frame region of each frame of the panoramic video and an indicator associated with the data of each frame region that identifies its corresponding panoramic video frame and its location within that frame.

18. A process of encoding images so as to allow for selective decoding of portions of the image, comprising the process actions of:

segmenting the image into plural corresponding segments; and
encoding each image segment separately, wherein the process action of encoding the image segments of the image comprises the action of creating at least one data file comprising the data associated with each image segment and an indicator associated with the data of each image segment that its location within that frame.

23. The process of Claim [22]18, wherein the process action of creating at least one data file further comprises an action of creating a separate data file for each image segment of the image.

29. The process of Claim [22]18, further comprises the process action of storing the at least one data file on a storage medium accessible by an image viewer.